

In the Claims

Claims are amended as follows:

1 to 48 (cancelled).

49. (new) A method of establishing a path in a communications network, the path being for use in a communications session between two endpoints, the method comprising the following steps:

- advertising information identifying a plurality of path elements or tunnels, the path elements or tunnels being between nodes of said communications network;

- at a first node associated with the first endpoint sending a communication session setup request message towards a second node associated with the second endpoint or with an intermediate node in the network;

- at a third node receiving the communication session setup message from the first node, or a message derived therefrom, and replicating the received message to form at least first and second forked communication session setup messages, the third node sending said first and second forked communication setup messages towards said second node along different respective paths;

- temporarily reserving bandwidth on path elements or tunnels traversed by the communication setup request messages;

- receiving at the second node at least two communication session setup request messages, these messages comprising, or being derived from, respective ones of said forked communication setup messages;

- selecting one of said different paths;

- at the second node sending a communication setup response message along said selected path towards said first node, said communication setup response message converting said temporarily reserved bandwidth on path elements of said selected path into permanent bandwidth reservations; and

- establishing a path for use in said communications session by storing items of said advertised information, the items identifying path elements or tunnels, associated with a path traversed by said communication setup response message;

- wherein the communication session setup request message sent by the first node towards the second node defines a partially explicit path between the first and

second nodes, and wherein the third node sends the forked communication setup messages in response to the partially explicit path not defining a part of the path between the third node and the second node.

50. (new) A method according to claim 49, wherein the third node determines that a node on the partially explicit path is not reachable through a fourth node and, in response, does not send a forked communication setup message to the fourth node.

51. (new) A method according to claim 49, wherein the communications network is a label-switched communications network and the information identifying a plurality of path elements or tunnels comprises labels.

52. (new) A method according to claim 49, wherein said information items are stored at nodes corresponding to endpoints of the path elements or tunnels associated with a path traversed by said communication setup response message thereby enabling data for the requested communication session to follow the selected path.

53. (new) A method according to claim 49, wherein records of said respective different paths traversed by said at least two communication session setup request messages received at the second node are created as said messages, or messages from which they derive, traverse the respective different paths.

54. (new) A method according to claim 49, wherein the first, second and third nodes are management nodes for transmitting control data and are each associated with respective abstract nodes for transmitting customer data.

55. (new) A method according to claim 54, wherein the path elements or tunnels are between abstract nodes.

56. (new) A method according to claim 55, wherein the abstract nodes comprise one or more physical nodes.

57. (new) A method according to claim 49, wherein the communication setup request and response messages are based on the session initiation protocol.

58. (new) A method according to claim 49, wherein said respective different paths are ranked according to their respective quality of service capabilities and the step of selecting one of said different paths is performed in dependence on said rankings.

59. (new) A method according to claim 58, wherein said ranking is established on the basis of a combination of a first ranking determined by the first node and a second ranking determined by the second node.

60. (new) A communications network comprising two endpoints and first, second and third nodes), the first node being associated with the first endpoint and the second node being associated with the second endpoint or with an intermediate node in the network, the network providing paths for use in a communications session established between the two endpoints), the network comprising:

- means for advertising information identifying a plurality of path elements or tunnels, the path elements or tunnels being between nodes of the network;

- the first node being arranged to send a communication session setup request message towards the second node;

- the third node being arranged to receive the communication session setup message from the first node, or a message derived therefrom, and to replicate the received message to form at least first and second forked communication session setup messages, the third node also being arranged to send said first and second forked communication setup messages towards said second node along different respective paths;

- the second node also being arranged to receive at least two communication session setup request messages, these messages comprising, or being derived from, respective ones of said forked communication setup messages;

- means for temporarily reserving bandwidth on path elements or tunnels traversed by the communication setup request messages;

- means for selecting one of said different paths;

- the second node also being arranged to send a communication setup response message along said selected path towards said first node, said

communication setup response message adapted to convert said temporarily reserved bandwidth on said path elements into permanent bandwidth reservations; and

means for establishing a path for use in said communications session by storing items of said advertised information, the items identifying path elements or tunnels associated with a path traversed by said communication setup response message;

wherein the communication session setup request message sent by the first node towards the second node comprises a data structure defining a partially explicit path between the first and second nodes, and wherein the third node is arranged to send the forked communication setup messages in response to a determination that the partially explicit path does not define a part of the path between the third node (55) and the second node.

61. (new) A communications network according to claim 60, wherein the third node is arranged to determine that a node on the partially explicit path is not reachable through a fourth node and, in response, to not send a communication setup message to the fourth node).

62. (new) A communications network according to claim 60, wherein the communications network is a label-switched communications network and wherein the information identifying a plurality of path elements or tunnels comprises labels.

63. (new) A communications network according to claim 60, wherein nodes corresponding to endpoints of the path elements or tunnels associated with a path traversed by said communication setup response message are arranged to store said information items thereby enabling data for the requested communication session to follow the selected path.

64. (new) A communications network according to claim 60, wherein it includes means to create records of said respective different paths traversed by said at least two communication session setup request messages as said messages, or messages from which they derive, traverse the respective different paths.

65. (new) A communications network according to claim 60, wherein the first, second and third nodes are management nodes for transmitting control data and are each associated with respective abstract nodes for transmitting customer data.

66. (new) A communications network according to claim 65, wherein the path elements or tunnels are arranged between abstract nodes.

67. (new) A communications network according to claim 65, wherein the abstract nodes comprise one or more physical nodes.

68. (new) A communications network according to claim 60, wherein the communication setup request and response messages comprise data structures based on the session initiation protocol.

69. (new) A communications network according to claim 60, wherein means are provided for ranking said respective different paths according to their respective quality of service capabilities and the means for selecting one of said different paths is arranged to perform the path selection in dependence on said rankings.

70. (new) A communications network according to claim 69, wherein said ranking means establishes rankings on the basis of a combination of a first ranking determined by the first node and a second ranking determined by the second node.

71. (new) A computer program stored on a computer readable medium, the computer program being for controlling a communications network comprising two endpoints and first, second and third nodes, the first node being associated with the first endpoint and the second node being associated with the second endpoint or with an intermediate node in the network, the computer program controlling the network to establish a path for use in a communications session between the two endpoints by performing the steps of:

advertising information identifying a plurality of path elements or tunnels, the path elements or tunnels being between nodes of said communications network;

at a first node associated with the first endpoint sending a communication session setup request message towards a second node associated with the second endpoint or with an intermediate node in the network;

at a third node receiving the communication session setup message from the first node, or a message derived therefrom, and replicating the received message to form at least first and second forked communication session setup messages, the third node sending said first and second forked communication setup messages towards said second node along different respective paths;

temporarily reserving bandwidth on path elements or tunnels traversed by the communication setup request messages;

receiving at the second node at least two communication session setup request messages, these messages comprising, or being derived from, respective ones of said forked communication setup messages;

selecting one of said different paths;

at the second node sending a communication setup response message along said selected path towards said first node, said communication setup response message converting said temporarily reserved bandwidth on path elements of said selected path into permanent bandwidth reservations; and

establishing a path for use in said communications session by storing items of said advertised information, the items identifying path elements or tunnels, associated with a path traversed by said communication setup response message;

wherein the communication session setup request message sent by the first node towards the second node defines a partially explicit path between the first and second nodes, and wherein the third node sends the forked communication setup messages in response to the partially explicit path not defining a part of the path between the third node and the second node.